

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

RHIC Heavy Ion (au) Gold Run for 2001

Monday: 10/15/01 06:30:28- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time: 06:30:24 +2402523)

QPA Faults: b12-dhx-qp Crow,

QD Alarms: 11b-qd1 B10DSA5_A4VT Tq= -24

Post Mortems: nothing unusual

Qdplots indicate a **Real Quench.**

Quench Status: The quench link interlock happened a few seconds after the the end of store was initiated, **beam dumped.**

Monday: 10/15/01 14:30:15- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time: 14:30:08 +3280383)

QPA Faults; b12-dhx-qp - CROW,

QD Alarms; 11b-qd1 B10DSA5_A4VT Tq= -24

Post Mortems show nothing unusual

Qdplots indicate a **Real Quench.**

Quench Status: **Beam Dump.**

Monday: 10/15/01 22:53:38- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time: 22:53:32 +975794)

QPA Faults; b12-dhx-qp - CROW

QD Alarms; 11b-qd1 B10DSA5_A4VT Tq= -24

Post Mortems show nothing unusual

Qdplots indicate a **Real Quench.**

Quench Status: The 10a-blm2 loss monitor board pulled the RHIC permit link when the beam was dumped causing the blue quench link interlock to followed soon after

Tuesday: 10/16/01 09:11:55- Beam Abort, 10a-ps3.A dropped {Loss Monitor 1}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time: 09:11:48 +1163697)

QPA Faults; b12-dhx-qp CROW

QD Alarms; 11b-qd1 B10DSA5_A4VT Tq= -24 / 10-qd1 Tq= -13

Post Mortems show nothing unusual

Qdplots indicate a **Real Quench.**

Quench Status: beam was dumped because Cryo required access into the tunnel

Tuesday: 10/16/01 20:42:14- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time: 20:42:08 +1548306)

QPA Faults: b12-dhx-qp CROW

QD Alarms: 11b-qd1 B10DSA5_A4VT Tq= -24

Post Mortems show nothing unusual.

Qdplots: indicate a **Real Quench** occurred.

Quench Status: **REAL**

Wednesday: 10/17/01 05:56:23- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}

Quench Link Interlock in Blue ring, 11b-ps1. (Actual time; 05:56:16 +3570115)

QPA Faults; b12-dhx-qp CROW

QD Alarms; 11b-qd1 B10DSA5_A4VT Tq= -24

Post Mortems show nothing unusual.

Qdplots indicate a **Real Quench.**

Quench Status: End of Store, likely another **dirty dump.** [Brian](#)

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Friday: 10/19/01 15:18:41- Beam Abort, 8b-ps1 dropped Blue Quench
Quench Link Interlock in Blue, 8b-ps1. (Actual Time: 15:18:36 +1040044)
QPA Faults; b8-dhx-qp CROW
QD Alarms; (8b-qd1) B7QFQ2_VT Tq= -24
Post Mortems show Bo7-qf2-ps & bo7-qd1-ps error before T=zero tripping link.
Qdplots: indicates VT drops before T=zero.
Quench Status: **Real Quench.**

Friday: 10/19/01 18:40:12- Beam Abort, 8b-ps1 dropped Blue Quench
Quench Link Interlock in Blue, 8b-ps1. (Actual Time: 18:40:04 +3366462)
QPA Faults; b8-dhx-qp CROW
QD Alarms; (8b-qd1) B8-QFQ3_VT Tq= -24
Quench Status: **Real Quench.**

Sunday: 10/21/01 13:13:44- Beam Abort, 10a-ps3.A dropped Blue Quench
Quench Link Interlock in Blue, 10a-ps3.A. (Actual Time: 13:13:36 +630318)
QPA Faults; b10-dho-qp CROW & bi9-dhx-qp CROW
QD Alarms; (10a-qd1) B10DRDO_DO Tq= -22
Post Mortems b10-dhx and bo10-dho show oscillation before T=zero
Qdplots: indicate real quench initiated by P.S. failure
Quench Status: **Real Quench.**

Sunday: 10/21/01 **Quench Link Interlock in Yellow, 10a-ps3.A.** (Actual Time: 13:13:36 +1538903)
QPA Faults; b10-dho-qp CROW & bi9-dhx-qp CROW
QD Alarms; (10a-qd2) Y9DRDO_DO Tq= -23
Post Mortems yo9-dho and yi9-dho show current rise of approx 2 amp before T=zero
Quench Status: **Real Quench.**

Tuesday: 10/23/01 **QLI - Beam Abort, Blue ring, 3b-ps1.** (Actual Time: 21:43:40 +2802155)
QPA Faults b4-dhx-qp CROW
QD Alarms (3b-qd1) B3DSA3_A2VT Tq= -24
Postmortems nothing unusual
Qdplots (PIC) Show VT drop indication of a quench
Quench Status: **Real Quench.**
Reason Blue quench link interlock originating from 3b-ps1. Cryo reported that a recooler was emptied.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Saturday: 10/27/01 Beam Abort, 10a-ps3.A QLI-Blue ring, 11b-ps1 (Actual Time 18:37:12 +2148055)

QPA Faults b12-dhx-qp CROW

QD Alarms (11b-qd1) B10DSA5_A4VT Tq-24

Postmortems (see PIC) bo11-qf2-ps

DX Heaters not fired

Qdplots indicate above Vtap did go negative before T=0 compared to others in the area.

Quench Status **REAL QUENCH**

Reason REAL QUENCH PAGE indicates the following (4) magnets quenched: (10a-qd1) B10QFQ4_6VT, (11b-qd1) B10DSA5_A4VT and (12a-qd1) B11QFQ3_VT & B11QFQ2_VT

Monday 10-29-01 QLI: BLUE 10a-ps3.A (Actual Time 06:17:48 +102882)

QPA Faults bi9-dhx-qp

QD Alarms (10a-qd1) B10QFQ4_6VT Tq-24

Postmortems (PIC)

DX Heaters not fired

QdRealQuench, (10a-qd1) B10QFQ4_6VT & (11b-qd1) B10DSA5_A4VT

Quench Status **REAL QUENCH**

Wednesday 10-31-01 QLI: BLUE 3b-ps1 (Actual Time 12:38:24 +2865357)

QPA Faults b4-dhx-qp CROW

QD Alarms (3b-qd1) B3DSA3_A2VT Tq-24

DX Heaters did not fire

Postmortems show nothing unusual

Qdplots indicate that the Vtap went neg approx. -0.08 before T=0

QdRealQuench indicates (3b-qd1) B3DSA3_A2VT

Quench Status **REAL QUENCH**

Thursday 11-01-01 Beam Abort, QLI: BLUE Ring 10a-ps3.A (Actual Time 06:52:08 +1513323)

QPA Faults bi9-dhx-qp CROW

QD Alarms (10a-qd1) B10QFQ4_6VT Tq-24

DX Heaters did not fire

Postmortems bo10-qd3-ps shows error signal -4.25 at T=0, several others show error signal rise slightly

Qdplots indicate Vtap dropped approx. -0.1533 before T=0

QdRealQuench indicated B10QFQ4_6VT

Quench Status **REAL QUENCH**

Sunday 11-04-01 QLI: BLUE 10a-ps3.A (Actual Time 05:30:20 +156663)

QPA Faults none

QD Alarms (10a-qd1) B9DRDX_VT Tq-22

DX Heaters FIRED, 10a-ps3.A2 & 10a-ps3.B2

QdRealQuench (10a-qd1) B9DRDX_VT

Postmortems shows bi9-dhx-ps Iref spike -0.042sec before T=zero

Qdplots B9DRDX_VT (RAW) goes to -0.033 before T=zero

Quench Status **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Monday: 11-05, Beam Abort, 4b-time.B, **QLI Yellow ring, 4b-time.B** (Actual Time 12:02:56 +3228183)
QPA Faults b4-dhx-qp CROW
QD Alarms no negative Tq's
DX Heaters 4b-ps4.A1, A2, B1 & B2 all FIRED, (set state yellowed out)
QdRealQuench (4b-qd1) B4DRDX_VT & B3DRDX_VT (also) qdev: Y2DSA5_A4VT, Y2DSA4_A3VT, Y3DSA3_A2VT, Y3DSA2_A1VT, Y2QDA3_A2VT & Y3QDA2_A1VT
Postmortems show b-dmain ps oscillating -0.102sec before T=zero
Qdplots N/A
Quench Status **REAL QUENCH**

Monday: 11-05, Beam Abort, 4b-time.B, **QLI Blue ring, 4b-time.B** (Actual Time 12:02:56 +3719277)
QPA Faults b4-dhx-qp CROW
QD Alarms no negative Tq's
DX Heaters 4b-ps4.A1, A2, B1 & B2 all FIRED, (set state yellowed out)
QdRealQuench (4b-qd1) B4DRDX_VT & B3DRDX_VT (also) qdev: Y2DSA5_A4VT, Y2DSA4_A3VT, Y3DSA3_A2VT, Y3DSA2_A1VT, Y2QDA3_A2VT & Y3QDA2_A1VT
Postmortems show y-dmain ps oscillating -0.125sec before T=zero
Qdplots N/A
Quench Status **REAL QUENCH**

Tuesday: 11-06, Beam Abort, 8b-ps1 dropped {Loss Monitor 1} **QLI Blue ring, 11b-ps1** (Actual Time 07:06:32 +121816)
QPA Faults b12-dhx-qp CROW
QD Alarms show (11b-qd1) B10DSA5_A4VT Tq-24
DX Heaters did not fire
QdRealQuench (11b-qd1) B10DSA5_A4VT and (10a-qd1) B10QFQ4_6VT also listed qdev: Y2DSA5_A4VT, Y2DSA4_A3VT, Y3DSA3_A2VT, Y3DSA2_A1VT, Y2QDA3_A2VT & Y3QDA2_A1VT
Postmortems
Qdplots show B10DSA5_A4VT RAW dropped -0.08167 before T=zero
Quench Status **REAL QUENCH**

Wednesday: 11-07, Beam Abort, 12a-ps1.A; **QLI in Blue ring, 11b-ps1** (Actual Time 04:04:16 +1428600)
QPA Faults b12-dhx-qp CROW
QD Alarms show (11b-qd1) B10DSA5_A4VT Tq-24
DX Heaters did not fire
QdRealQuench (11b-qd1) B10DSA5_A4VT and (12a-qd1) B11QFQ3_VT
Postmortems several indicated a voltage drop and current rise before T=zero
Qdplots show B10DSA5_A4VT (RAW) dropped -0.0669 before T=zero
Quench Status **REAL QUENCH**

Thursday: 11-08, Beam Abort, 10a-ps3.A {Loss Monitor 1; **QLI Yellow ring, 8b-ps1** (Actual Time 02:53:32 +3042090)
QPA Faults none, yellow off
QD Alarms (8b-qd2) Y8QFQ3_VT Tq-24
DX Heaters did not fire
QdRealQuench (8b-qd2) Y7QFQ3_VT, Y8QFQ2_VT, Y8QFQ3_VT and (9b-qd1) Y9DSA3_A2VT, Y9DSA2_A1VT
Postmortems indicate slight changes in current, voltage and error prior to T=zero
Qdplots verify Vtap Y8QFQ3 drop before T=0
Quench Status **REAL QUENCH**
Beam Loss monitors show several high losses

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Saturday: 11-10, Beam Abort 3b-ps1; QLI in **Blue ring, 3b-ps1** (Actual Time 00:10:44 +3053328)
QPA Faults b4-dhx-qp CROW
QD Alarms (3b-qd1) B2DSA5_A4VT Tq -12 (and many others)
DX Heaters all in 2b, 4b and 8b
QdRealQuench Multiple shown
Postmortems show blue dipole main p.s. ramp current and voltage rise approx -0.020sec before T=0
Qdplots Multiple taps drop -0.017 before T=0
Quench Status: **REAL QUENCH**

Saturday: 11-10, Beam Abort 12a-ps1.A; QLI in **Blue ring, 11b-ps1** (Actual Time 22:16:36 +3706582)
QPA Faults b12-dhx-qp CROW
QD Alarms (11b-qd1) B10DSA5_A4VT Tq -24
DX Heaters did not fire
QdRealQuench (11b-qd1) B10DSA5_A4VT
Postmortems show nothing unusual
Qdplots N/A
Quench Status: **REAL QUENCH**

Sunday: 11-11, QLI **Blue 2b-ps1** (Actual Time 15:20:24 +130175)
QPA Faults b2-dhx-qp CROW
QD Alarms (2b-qd1) B2/1DX_DX Tq -20
DX Heaters 2b-ps2.A1 and 2b-ps2.B1 FIRED
QdRealQuench (2b-qd1) B2DRDX_VT
Postmortems N/A
Qdplots N/A
Quench Status: **REAL QUENCH**

Saturday: 11-17, Beam Abort 9b-ps1 dropped, QLI in **Yellow ring, 9b-ps1** (Actual Time 07:18:12 +2811211)
QPA Faults bi9-dhx-qp CROW, blue and yellow off
QD Alarms (9b-qd1) Y8DSA5_A4VT, tq-23 [all others tripped and also contain negative tq's]
DX Heaters all fired at 4b
QdRealQuench (4b-qd1) B4DRDX_VT and B3DRDX_VT
Postmortems show yellow dipole main current drops from 5060 to 4757amps at -0.033sec.
Qdplots indicate voltage taps listed above dropped -0.017sec before T=0 .
Beam Loss Monitors
Quench Status **REAL QUENCH**

Saturday: 11-17, Beam Abort, QLI in **Blue ring, 4b-time.A** (Actual Time 07:18:16 +1458257)
QPA Faults b4-dhx-qp CROW, blue and yellow off
QD Alarms (4b-qd1) B4DRDO_DO, tq-22 [also: (6b-qd1) B6DRDO_DO, tq-23 and (8b-qd1) B8DRDO_DO, tq-23]
DX Heaters all fired in 4b
QdRealQuench (4b-qd1) B4DRDX_VT and B3DRDX_VT
Postmortems show that the b4-dho-ps upon tripping off after T=0 that the current spikes down from +90 to -90amps rebounds to positive of zero then drops to -450amps before returning to zero. The Error goes to full +10volts then to -10volts lagging behind the current.
Qdplots indicate ring at top energy
Beam Loss Monitors
Quench Status **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Monday: 11-19, Beam Abort 11b-ps1, **QLI in Yellow ring, 1b-ps1** (Actual Time 05:32:40 +1309699)
QPA Faults b2-dhx-qp CROW, blue and yellow off
QD Alarms (1b-qd1 no data) 2b-qd2 Y1DSA9_5VT, tq-11 [7 others contain negative tq's]
DX Heaters none fired
QdRealQuench none listed, reason is believed that MCR didn't allow time for data to collect before they reset.
Postmortems show yellow main dipole current quickly drops from 5066amps to 4615amps before T=0
Qdplots YDMC dy/dx indicates wrong SF used
Beam Loss Monitors
Quench Status **REAL QUENCH**

Monday: 11-19, Beam Abort 11b-ps1, **QLI in Blue ring, 11b-ps1** (Actual Time 05:32:40 +1460215)
QPA Faults b12-dhx-qp CROW, blue and yellow off
QD Alarms (11b-qd1) B10DSA5_A4VT, tq-24
DX Heaters none fired
QdRealQuench none listed, reason is believed that MCR didn't allow time for data to collect before they reset.
Postmortems show
Qdplots B10DSA5_A4VT drops -0.135sec before T=0
Beam Loss Monitors high loss g10-1m.12
Quench Status **REAL QUENCH**

Monday: 11-19, **QLI in Blue ring 8b-ps1** (Actual Time 09:43:32 +3150032)
QPA Faults b8-dhx-qp CROW, blue and yellow off [bo7-tq4-qp and bo7-tq5-qp also off]
QD Alarms (8b-qd1) B7QFQ2_VT, tq-24, all others tripped with positive tq's
DX Heaters all 4b fired
QdRealQuench (8b-qd1) B7QFQ2_vt, B7QFQ1_VT, B7DRDO_DO, (4b-qd1) B4DRDX_VT, B3DRDX_VT, (10a-qd1) B10QFQ4_6VT and B10DSD5_9VT
Postmortems show yellow dipole main shows current & Iref offset by about 20amps
Qdplots Vtaps above drop before T=0, B7IMQ2 (RAW) begins to drop -0.033sec before T=0
Beam Loss Monitors indicate high losses in 8 o'clock: g8-m1mx.2 and g8-m1mx.1, in 7 o'clock: b7-1m3.1, y7-1m3.1, g7-1m1, b7-1mo, y7-1mo, g7-1mx, g7-m1mx2, g7-m1mx.1 and y7-1m3.5-c
Quench Status **REAL QUENCH**

Monday: 11-19, **QLI in Yellow ring, 8b-ps1** (Actual Time 09:43:32 +3265616)
QPA Faults b8-dhx-qp CROW, blue and yellow off [bo7-tq4-qp and bo7-tq5-qp also off]
QD Alarms (8b-qd2) Y7DRDO_DO, tq-23
DX Heaters all 4b fired
QdRealQuench (8b-qd1) B7QFQ2_vt, B7QFQ1_VT, B7DRDO_DO, (4b-qd1) B4DRDX_VT, B3DRDX_VT, (10a-qd1) B10QFQ4_6VT and B10DSD5_9VT
Postmortems show
Qdplots Vtaps above drop before T=0, Y8/7IMDO (RAW) and BDMC (RAW) begin to drop off -0.1sec before T=0, dy/dx indicates that perhaps a wrong SF was used.
Beam Loss Monitors indicate high losses in 8 o'clock: g8-m1mx.2 and g8-m1mx.1, in 7 o'clock: b7-1m3.1, y7-1m3.1, g7-1m1, b7-1mo, y7-1mo, g7-1mx, g7-m1mx2, g7-m1mx.1 and y7-1m3.5-c
Quench Status **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Wednesday: 11-21, Beam Abort , 10a-ps3.A, **QLI in Blue ring, 3b-ps1** (Actual Time 04:55:16 +3436183)

QPA Faults b4-dhx-qp CROW, blue and yellow off

QD Alarms (3b-qd1) B3DSA3_A2VT tq-24

DX Heaters did not fire

QdRealQuench (3b-qd1) B3DSA3_A2VT and B3DSA2_A1VT

Postmortems indicated that b4-dho-ps went from +100amps to -450amps after T=0 of the trip

Qdplots ramping up to full energy, it looks like maybe the ramp was too fast but Physicist claim the quench was because two correctors tripped off during the ramp.

Beam Loss Monitors show high losses 3680 rads/hr at g3-1m14, multiple high dumps at 10 dmp's look normal

Quench Status **REAL QUENCH**

Wednesday: 11-21, Beam Abort 2b-ps1, **QLI in Blue ring, 2b-ps1** (Actual Time 13:52:52 +1681305)

QPA Faults b2-dhx-qp CROW, blue off

QD Alarms (2b-qd1) B2DRDO_DO tq-23, all others tripped positive

DX Heaters all 2b FIRED

QdRealQuench (2b-qd1) B2DRDX_VT and B1DRDX_VT

Postmortems indicate that b2-dho-ps current, Iref, voltage and error all dropped out -0.032sec before T=0

Qdplots B2/1IMDO (raw) shot upwards from 4859amps T-0.03346sec to 5797amps. B2DRDX_VT and B1DRDX_VT rise after T=zero.

Beam Loss Monitors indicate high but normal loss at 10

Quench Status **REAL QUENCH**

Wednesday: 11-21, **Beam Abort 1b-ps1, QLI in Yellow ring, 1b-ps1** (Actual Time 20:54:28 +3963930)

QPA Faults none, yellow off

QD Alarms (1b-qd1) Y12DSA5_A4VT, Tq-23 (All others indicate negative Tq's also)

DX Heaters did not fire

QdRealQuench (Multiple throughout the ring) Looking at: (1b-qd1) Y12DSA5_A4VT, Y12DSA4_A3VT, Y1DSA3_A2VT, Y1DSA2_A1VT

Postmortems indicate that the yellow main dipole power supply current began to drop off at approximately -0.032 while the Iref remained.

Qdplots yellow main dipole sitting at top energy of 5046amps. After T=0, current pulses up then down several times as it decays towards zero. All voltage taps listed above for 1b-qd1 drop negative at -0.0167sec.

Beam Loss Monitors show a high loss of 3335 rads/hr at g10-1m12, looked at several other pages and they appeared low.

Quench Status **REAL QUENCH**

Thursday: 11-22, **Beam Abort 11b-ps1, QLI in Blue ring, 11b-ps1** (Actual Time 20:50:48 +1997106)

QPA Faults blue off with b12-dhx-qp indicating CROW

QD Alarms (11b-qd1) B10DSA5_A4VT, Tq-24

DX Heaters did not fire

QdRealQuench (11b-qd1) B10DSA5_A4VT

Postmortems 1012A looks okay and so do the main power supplies

Qdplots blue main power supply sitting at top energy, normal drop to zero current after trip. V-tap at 11b-qd1 drops negative approx -0.18345sec. Other V-taps in the area appear normal.

Beam Loss Monitors b11-1m3.1 high at 2606 rads/hr while the 10BLM indicate high at the blue dumps but especially g10-1m12 which is farther away, indicating over 5000 rads/hr.

Quench Status **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

RHIC Polarized Proton (p⁺) Run for 2001 - 2002

Tuesday: Dec 04, 2001

→ QLI in Blue Snake BO3-SNK7-2.3-PS (Actual Time 23:05:19)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-2.3 current=326amps
Looks like a drop in current that caused it to trip. This one caused Snake 1.4 to quench.
No Beam loss data.

→ QLI in Blue Snake BO3-SNK7-1.4-PS (Actual Time 23:05:34)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-1.4 current=100amps
V-tap BO3-SNK7_1VT drops slowly around -2.56sec before T=0.
Appeared to be a slow quench with no beam loss
Quench Status: **REAL QUENCH**

Wednesday: Dec 05, 2001

→ QLI in Blue Snake Magnet: BI9-SNK7-2.3-PS (Actual Time 13:37:21)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
V-tap BI3-SNK7_2VT drops negative around -0.166sec before T=0
Quench - Current drops first
Quench Status: **REAL QUENCH**

→ QLI in Blue Snake Magnet: BI9-SNK7-1.4-PS (Actual Time 13:37:23)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
V-tap BI9-SNK7_1VT drops negative around -0.166sec before T=0
Quenched later on, Error, Quench

Thursday: Dec 06, 2001

→ QLI in Blue Snake Magnet: BI9-SNK7-2.3-PS (Actual Time 21:14:28)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Lead voltage drops look stable, probably caused by a high beam loss although there is no BLM data.

→ QLI in Blue Snake Magnet: BI9-SNK7-1.4-PS (Actual Time 21:14:30)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

Thursday: Dec 06, 2001

→ QLI in Blue Snake Magnet: BO3-SNK7-2.3-PS (Actual Time 21:14:38)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Probably due to high beam loss although there is no BLM data.

→ QLI in Blue Snake Magnet: BO3-SNK7-1.4-PS (Actual Time 21:14:42)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Thursday: Dec 06, 2001

→ **QLI in Blue Snake Magnet: BI9-SNK7-2.3-PS** (Actual Time 23:53:35)
Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Lead voltage drops look stable, probably caused by a high beam loss although there is no BLM data.

→ **QLI in Blue Snake Magnet: BI9-SNK7-1.4-PS** (Actual Time 23:53:37)
Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

Thursday: Dec 06, 2001

→ **QLI in Blue Snake Magnet: BO3-SNK7-2.3-PS** (Actual Time 23:53:45)
Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Probably caused by a high beam loss although there is no BLM data.

→ **QLI in Blue Snake Magnet: BO3-SNK7-1.4-PS** (Actual Time 23:53:49)
Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BO3SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

Friday: Dec 07, 2001

→ **QLI in Blue Snake Magnet: BI9-SNK7-2.3-PS** (Actual Time 02:36:30)
Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH**
Reason: Data from the QD Plots look wrong, there are no voltage signals at correct size. Probably caused by a high beam loss although there is no BLM data.

→ **QLI in Blue Snake Magnet: BI9-SNK7-1.4-PS** (Actual Time 02:36:32)
Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
Reason: These signals look okay, this magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

Friday: Dec 07, 2001

→ **QLI in Blue Snake Magnet: BO3-SNK7-2.3-PS** (Actual Time 02:36:40)
Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BO3-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Probably caused by a high beam loss although there is no BLM data.

→ **QLI in Blue Snake Magnet: BO3-SNK7-1.4-PS** (Actual Time 02:36:44)
Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BO3SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Friday: Dec 07, 2001

QLI in Blue Snake Magnet: BI9-SNK7-2.3-PS (Actual Time 05:29:55)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
Quench Status: **REAL QUENCH** of storage unit #3.
Reason: Probably caused by a high beam loss although there is no BLM data.

QLI in Blue Snake Magnet: BI9-SNK7-1.4-PS (Actual Time 05:29:57)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL QUENCH**

Friday: Dec 07, 2001

QLI in Blue Snake Magnet: BO3-SNK7-2.3-PS (Actual Time 14:50)

Qdplots indicate Blue Auxiliary 1 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-2.3 current=326amps
Quench Status: **REAL MAGNET QUENCH**

QLI in Blue Snake Magnet: BO3-SNK7-1.4-PS (Actual Time 14:50)

Qdplots indicate Blue Auxiliary 0 quenched.
BDMC=473amps, sitting at injection. BI9-SNK7-1.4 current=100amps
This magnet quenched because the 2.3 quenched.
Quench Status: **REAL MAGNET QUENCH**

Tuesday: Dec 11, 2001

QLI in Yellow Snake Magnet: YI3-SNK7-1.4-PS (Actual Time 04:32:25)

Qdplots indicate Yellow Auxiliary 2 quenched.
YMDC = 473amps, sitting at injection. YI3-SNK7-1.4 current = 100amps.
Quench Status: Not real

QLI in Yellow Snake Magnet: YI3-SNK7-2.3-PS (Actual Time 04:34:10)

Qdplots indicate Yellow Auxiliary 3 quenched.
YMDC = 473amps, sitting at injection. YI3-SNK7-2.3 current = 326amps.
Quench Status: **REAL QUENCH**, coil #2.
Reason: Yellow Snake Magnet: YI3-SNK7-1.4-PS caused it to quench.

Tuesday: Dec 11, 2001

QLI in Yellow Snake Magnet: YI3-SNK7-1.4-PS (Actual Time 07:15:31)

Qdplots indicate Yellow Auxiliary 2 quenched.
YMDC = 473amps, sitting at injection. YI3-SNK7-1.4 current = 100amps.
Quench Status: Not real

QLI in Yellow Snake Magnet: YI3-SNK7-2.3-PS (Actual Time 07:15:34)

Qdplots indicate Yellow Auxiliary 3 quenched.
YMDC = 473amps, sitting at injection. YI3-SNK7-2.3 current = 326amps.
Quench Status: **REAL QUENCH**, coil #2.
Reason: Yellow Snake Magnet: YI3-SNK7-1.4-PS caused it to quench.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Thursday: Dec 13, 2001

→ **QLI in Yellow Snake Magnet: YI3-SNK7-2.3-PS** (Actual Time 19:54:27)

Snapshot shows the Iref drop before the Current.

Qdplots indicate YMDC2 = 473.45amps, sitting at injection. YI3-SNK7-2.3 current = 326.0amps

V-tap YI3SNK7_2VT goes negative around -0.18167sec.

Quench Status: **REAL QUENCH**, first one to quench.

→ **QLI in Yellow Snake Magnet: YI3-SNK7-1.4-PS** (Actual Time 19:54:30)

Snapshot shows the Iref drop before the Current.

Qdplots indicate YMDC = 473.45amps, sitting at injection. YI3-SNK7-1.4 current = 99.6amps.

Quench Status: **REAL QUENCH**

Reason: Affected by the YI3-SNK7-2.3 trip as the V-taps show Perturbation -2.60sec before it quenches.

Sunday: Dec 16, 2001:

→ **Beam Abort, 3c-ps1 dropped snake, QLI in Blue Snake Magnet: bo3-snk7-2.3-ps** (Actual Time 15:42:41)

Qdplots indicate Blue Auxiliary 1 quenched.

BMDC = 473.4 amps, sitting at Injection. BO3-SNK7-2.3 current = 319.7amps

Qdplots: Show V-tap BO3SNK7_3VT goes negative before T= Zero.

Beam Loss Monitors: Indicate several losses around Sector 3 at b3-1m7.1-snk (450r/h), g3-1m7 (950r/h), g3-1m6 (425r/h) and y3-1m7.1-snk (400r/h). Sector 10, b10-1m3.3-ka (3000r/h), the dmp's are all in the green.

Quench Status: **REAL QUENCH**

→ **Beam Abort, 3c-ps1 dropped snake, QLI in Blue Snake Magnet: bo3-snk7-1.4-ps** (Actual Time 15:44:03)

Qdplots indicate Blue Auxiliary 0 quenched.

BMDC = 473.4 amps, sitting at Injection. BO3-SNK7-1.4 current = 70.3amps

Qdplots: V-taps do not indicate that Perturbation took place.

Beam Loss Monitors: (See above)

Quench Status: Not Real.

Reason: Permit Link went down due to Quench on bo3-snk7-2.3

Sunday: Dec 16, 2001:

→ **Beam Abort, QLI in 9C Blue Snake Magnet: bi9-snk7-2.3-ps** (Actual Time 16:32:29)

Qdplots indicate Blue Auxiliary 1 quenched.

BMDC = 473.4amps, sitting at Injection. BI9-SNK7-2.3 current = 326.2amps.

Qdplots: Show V-tap BI9SNK7_3VT goes negative before T= Zero.

Beam Loss Monitors: Sector 9, show high loss around 2000rads/hr at y9 and b9 snakes.

Quench Status: **REAL QUENCH**

→ **Beam Abort, QLI in 9C Blue Snake Magnet: bi9-snk7-1.4-ps** (Actual Time 16:32:32)

Qdplots indicate Blue Auxiliary 0 quenched.

BMDC = 473.4amps, sitting at Injection. BI9-SNK7-1.4 current = 100.26amps.

Qdplots: Affected by the bi9-snk7-2.3 trip as the two V-taps show Perturbation -2.6sec before it quenches.

Beam Loss Monitors: (See above)

Quench Status: **REAL QUENCH**

Reason: Caused by bi9-snk7-2.3.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Sunday: Dec 16, 2001:

- ▶ **Beam Abort, QLI in 3C Blue Snake Magnet: bo3-snk7-2.3-ps** (Actual Time 16:32:29)
Qdplots indicate Blue Auxiliary 1 quenched.
BMDC =473.4amps, sitting at Injection. BO3-SNK7-2.3 current =325.9amps.
Qdplots: Indicate V-tap BO3SNK7_3VT goes negative before T= Zero.
Beam Loss Monitors: N/A
Quench Status: **REAL QUENCH**
Reason: Beam Induced.
- ▶ **Beam Abort, QLI in 3C Blue Snake Magnet: bo3-snk7-1.4-ps** (Actual Time 16:32:32)
Qdplots indicate Blue Auxiliary 0 quenched.
BMDC =473.4amps, sitting at Injection. BO3-SNK7-1.4 current = 99.6amps.
Qdplots: Affected by the bo3-snk7-2.3 trip as the two V-taps show Perturbation -3.7sec before it quenches.
Beam Loss Monitors: N/A
Quench Status: **REAL QUENCH**
Reason: Caused by the bo3-snk7-2.3 Quench.

Monday: Dec 17, 2001

- ▶ **QLI in 9C Blue Snake Magnet bi9-snk7-2.3** (Actual Time 15:39:07)
Qdplots indicate Blue Auxiliary 1 quenched.
BMDC =473.4amps, sitting at Injection. BI9-SNK7-2.3 current =326.2amps.
Qdplots: V-tap BI9SNK7_2VT drops negative approximately -0.18sec before T= Zero.
Beam Loss Monitors: N/A
Quench Status: **REAL MAGNET QUENCH**
- ▶ **QLI in 9C Blue Snake Magnet bi9-snk7-1.4** (Actual Time 15:39:09)
Qdplots indicate Blue Auxiliary 0 quenched.
BMDC =473.4amps, sitting at Injection. BI9-SNK7-1.4 current =100.4amps.
Qdplots: Indicate that both V-taps perturbation -1.84sec caused by bi9-snk7-2.3 quench.
Beam Loss Monitors: N/A
Quench Status: **REAL MAGNET QUENCH**
Reason: Caused by bi9-snk7-2.3 quenching.

Monday: Dec 17, 2001

- ▶ **QLI in 3C Blue Snake Magnet bo3-snk7-2.3** (Actual Time 15:39:12)
Qdplots indicate Blue Auxiliary 1 quenched.
BMDC =473.4amps, sitting at Injection. BO3-SNK7-2.3 current =325.8amps
Qdplots: V-tap BO3SNK7_3VT goes negative approximately -0.17 sec before T= Zero.
Beam Loss Monitors: N/A
Quench Status: **REAL MAGNET QUENCH**
- ▶ **QLI in 3C Blue Snake Magnet bo3-snk7-1.4** (Actual Time 15:39:16)
Qdplots indicate Blue Auxiliary 0 quenched.
BMDC =473.4amps, sitting at Injection. BO3-SNK7-1.4 current = 99.7amps
Qdplots: Indicate that both V-taps perturbation -3.7sec caused by bo3-snk7-2.3 quench.
Beam Loss Monitors: N/A
Quench Status: **REAL MAGNET QUENCH**
Reason: Caused by bo3-snk7-2.3 quench

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Thursday: Dec 20, 2001:

▶ Snake Magnet QLI in 3C, Blue bo3-snk7-2.3-ps (Actual Time 09:21:39)

Snapshot Data: Indicated the supply turned off, (Power Supply Link Carrier)
Qdplots indicate BMDC = zero amps. BO3-SNK7-2.3 current = 325.90amps.
Beam Loss Monitors: N/A, no data

Quench Status: REAL MAGNET QUENCH

Reason: Power to the Controls Low Res Card Bucket was turned off for repair work performed on Corrector Magnet bo3-th8. (The low res card for bo3-th8 was swapped out) The low res card for bo3-th8 and these two Blue Snake power supplies reside in the same controls bucket and therefore tripped the both blue snake power supplies.

▶ Snake Magnet QLI in 3C, Blue bo3-snk7-1.4-ps (Actual Time 09:21:39)

Snapshot Data: Indicated the supply turned off, (Power Supply Link Carrier)
Qdplots indicate BMDC = zero amps. BO3-SNK7-1.4 current = 99.71amps.
Beam Loss Monitors: N/A, no data

Quench Status: REAL MAGNET QUENCH

Reason: Power to the Controls Low Res Card Bucket was turned off for repair work performed on Corrector Magnet bo3-th8. (The low res card for bo3-th8 was swapped out) The low res card for bo3-th8 and these two Blue Snake power supplies reside in the same controls bucket and therefore tripped the both blue snake power supplies.

▶ Permit.9c-ps1 Snake 22:06:04 +1669313

Saturday: Dec 22, 2001:

QLI in Alcove 9C; bi9-snk7-2.3-p.s. (Snapshot Data Time: 22:06:05)

Snap Shot: Indicates that the current began to drop off before the Iref.
Qdplots indicate BMDC = 473.44amps sitting at Injection BI9-SNK7-2.3 current = 326.18amps
Qdplots V-tap: Magnet quench did not pull down the Main P.S., BI9SNK7_3VT goes negative approx. -0.199sec, T= zero.
Beam Loss Monitors: ???

Quench Status: REAL MAGNET QUENCH

Reason: ????

▶ QLI in Alcove 9C; bi9-snk7-1.4-p.s. (Snapshot Data Time: 22:06:08)

Snap Shot: Indicates that the Iref dropped before current.
BI9-SNK7-1.4 current = 100.23amps
Qdplots Indicate that perturbation took place for both V-taps around -2.446seconds before tripping.
Beam Loss Monitors: ???

Quench Status: REAL MAGNET QUENCH

Reason: Caused by the bi9-snk7-2.3 quench.

▶ Permit.9c-ps1 Snake 07:59:24 +2263022

Sunday: Dec 23, 2001:

QLI in Alcove 9C; bi9-snk7-2.3-p.s. (Snapshot Data Time: 07:59:26)

Snap Shot: Indicates that the current began to drop first then Iref.
Qdplots indicate BMDC = 473.44amps sitting at Injection BI9-SNK7-2.3 current = 326.47amps
Qdplots V-tap: Magnet quench did not pull down the Main P.S., BI9SNK7_2VT goes negative approx. -0.215sec. T=zero.
Beam Loss Monitors: ???

Quench Status: REAL MAGNET QUENCH

Reason: Possible Beam Induced.

▶ QLI in Alcove 9C; bi9-snk7-1.4-p.s. (Snapshot Data Time: 07:59:28)

Snap Shot: Indicates that the Iref dropped before current.
BI9-SNK7-1.4 current = 100.30amps
Qdplots Indicate that perturbation took place for both V-taps around -1.948seconds before tripping.
Beam Loss Monitors: ???

Quench Status: REAL MAGNET QUENCH

Reason: Caused by the bi9-snk7-2.3 quench.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

► Permit.3c-ps1 Snake Link Failure (Time: 05:16:36 +3685309)

Tuesday: Dec 25, 2001:

Blue Snake - Alcove 3C, b03-snk7-2.3-p.s. (Snapshot Data Time: 05:16:39)

Snap Shot: Indicates the supply went to OFF, the Iref dropped before current.

Current Settings: BMDC=473.44amps going from Injection to full energy. BO3-SNK7-2.3 current =325.82amps.

Qdplots V-tap: Both V-taps (7_2VT and 7_3VT) go positive around -0.099seconds.

Beam Loss Monitors: Sector 3, g3-m1mx.4 and g3-m1mx.3 shows no data, all others appear normal.

Quench Status: **REAL MAGNET QUENCH**

Reason: Power supply went to the OFF state and Quenches when tripped at maximum setpoint.

► Blue Snake - Alcove 3C,bo3-snk7-1.4-p.s. (Snapshot Data Time: 05:16:43)

Snap Shot: Indicates that the Iref dropped before current.

Current Settings: BO3-SNK7-1.4 current =99.72amps

Qdplots V-tap: Indicate that perturbation took place for both V-taps around -3.581seconds before T= zero.

Beam Loss Monitors: Sector 3, g3-m1mx.4 and g3-m1mx.3 shows no data, all others appear normal.

Quench Status: **REAL MAGNET QUENCH**

Reason: Caused by bo3-snk7-2.3 quenching.

► Permit.3c-ps1 Snake Link Failure (Time: 16:02:32 +2661794)

Wednesday: Dec 26, 2001:

Blue Snake - Alcove 3C, b03-snk7-2.3-p.s. (Snapshot Data Time: 16:02:34)

Snap Shot: Indicates the supply went to OFF, the Iref and voltage dropped first followed by current, then approx. 3seconds later all three signals go negative to approx. 190amps.

Current Settings: BMDC =473.44amps sitting at Injection. BO3-SNK7-2.3 current =325.88amps.

Qdplots V-tap: Both V-taps (7_2VT and 7_3VT) go positive around -0.083seconds.

Beam Loss Monitors: Sector 3, g3-m1mx.4 and g3-m1mx.3 shows no data, all others appear normal.

Quench Status: **REAL MAGNET QUENCH**

Reason: Occurs when tripping at maximum setpoint.

► Blue Snake - Alcove 3C, bo3-snk7-1.4-p.s. (Snapshot Data Time: 16:02:38)

Snap Shot: Indicates that the Iref dropped before current.

Current Settings: BO3-SNK7-1.4 current =99.60amps

Qdplots: Indicate that perturbation took place for both V-taps around -3.764seconds before T= zero.

Beam Loss Monitors: Sector 3, g3-m1mx.4 and g3-m1mx.3 shows no data, all others appear normal.

Quench Status: **REAL MAGNET QUENCH**

Reason: Caused by bo3-snk7-2.3 quenching.

Permit.3c-ps1 Snake Link Failure (*Did Not Register*) (Time: +)

Thursday, Dec 27, 2001:

Yellow Snake - Alcove 3C, yi3-snk7-1.4-p.s. (Snapshot Data Time: 16:13:06)

Snap Shot: Indicates that the power supply shut off.

Current Settings: BMDC = 0 amps Snake Magnet Current = 99.707 amps.

Qdplots V-tap: N/A

Beam Loss Monitors: N/A

Quench Status: **REAL MAGNET QUENCH**

Reason: Ac phase fault, phase C to neutral = 40.7 volts (should read about 116vac).

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Permit.3c-ps1 Snake Link Failure (*Did Not Register*) (Time: +)

Thursday, Dec 27, 2001:

Yellow Snake - Alcove 3C, yi3-snk7-2.3-p.s. (Snapshot Data Time: 16:48:59)

Snap Shot: Iref drops before current.

Current Settings: BMDC = 1952.36 amps, top energy. Snake Magnet Current = 326.36 amps.

Qdplots V-tap: Tripped on YI3SNK7R2_GL (gas cooled lead) but looks like the trip occurred after T=0.

Beam Loss Monitors: N/A, there was no beam at the time.

Quench Status: **REAL MAGNET QUENCH**

Reason: yi3-snk7-1.4 tripping earlier.

Thursday, Dec 27, 2001: QLI in Yellow ring, 4b-time.A (Actual Time: 16:49:28 +3412730)

QPA Faults: Yellow power supplies OFF with no indication, Blue and all Tq's remain ON.

QD Alarms: (4b-qd2) Y3DRBUO_9VT Tq-22, all others indicate positive values.

DX Heaters: None fired but 4b and 10a "set state" have no "ON" indications.

QdRealQuench: 12 detectors fired with no indications.

Postmortems: Ramping down from top energy of 1951 amps.

Qdplots V-tap: Indicates Y3DRBUO_9VT to drop at -7.364 seconds before T=0.

Beam Loss Monitors: N/A, there was no beam at the time.

Quench Status: **REAL BUSS QUENCH**

Reason: yi3-snk7-1.4 tripping earlier.

Permit.3c-ps1 Snake Link Failure (Time: 02:21:20 +3412065)

Monday, Dec 31, 2001:

Yellow Snake - Alcove 3C, yi3-snk7-2.3-p.s. (Snapshot Data Time: 02:21:23)

Snap Shot: Current began to drop then p.s. tripped off

Current Settings: YMDC = 473.45amps. Snake Magnet Current = 325.58amps.

Qdplots V-tap: SNK7_VT goes negative approx. -0.149sec.

Beam Loss Monitors: No data available.

Quench Status: **REAL MAGNET QUENCH**

Reason: Beam induced while tuning yellow vertical injection.

Yellow Snake - Alcove 3C, yi3-snk7-1.4-p.s. (Snapshot Data Time: 02:21:26)

Snap Shot: Iref drops before Current

Current Settings: yi3-snk7-1.4-p.s. = 99.64amps.

Qdplots V-tap: Indicate that perturbation took place for both V-taps around -2.603sec before T=0.

Quench Status: **REAL MAGNET QUENCH**

Reason: Quenched due to the yi3-snk7-2.3 magnet quench.

Permit.9c-ps1, Snake Link Failure (Time: 03:52:36 +1509612)

Tuesday, January 01, 2002:

Blue Snake - Alcove 9C, bi9-snk7-2.3-ps (Snapshot Data Time: 03:52:37)

Snap Shot: (Stby-error), current drops before Iref, voltage goes up, current down.

Current Settings: BMDC = 473.44 sitting at Injection. Snake Magnet Current = 326.45amps.

Qdplots V-tap: BI9SNK7_2VT goes negative approximately -0.22sec before T=0.

Beam Loss Monitors: No data available.

Quench Status: **REAL MAGNET QUENCH**

Reason: Beam induced.

Blue Snake - Alcove 9C, bi9-snk7-1.4-ps (Snapshot Data Time: 03:52:39)

Snap Shot: (Stby-error), current drops before Iref.

Current Settings: Snake Magnet Current = 100.24amps.

Qdplots V-tap: Indicates that perturbation occurred approximately -1.957sec before T=0.

Quench Status: **REAL MAGNET QUENCH**

Reason: Caused by the SNK7-2.3 magnet quenching.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Permit.9c-ps1, Snake Link Failure (Time: 06:13:00 +3366684)

Tuesday, January 01, 2002:

→ **Blue Snake - Alcove 9C, bi9-snk7-2.3-ps (Snapshot Data Time: 06:13:03)**

Snap Shot: (Stby-error), current drops before Iref, voltage goes up, current down.

Current Settings: BMDC = 473.44 sitting at Injection. Snake Magnet Current = 326.48amps.

Qdplots V-tap: B19SNK7_2VT goes negative approximately -0.249ec before T=0.

Beam Loss Monitors: No data available.

Quench Status: **REAL MAGNET QUENCH.**

Reason: Beam induced.

→ **Blue Snake - Alcove 9C, bi9-snk7-1.4-ps (Snapshot Data Time: 06:13:05)**

Snap Shot: (Stby-error), current drops before Iref.

Current Settings: Snake Magnet Current = 100.27amps.

Qdplots V-tap: Indicates that perturbation occurred approximately -2.01sec before T=0.

Quench Status: **REAL MAGNET QUENCH.**

Reason: Caused by the SNK7-2.3 magnet quenching.

Monday, January 07, 2002: Beam Abort, 3b-ps1, QLI in Blue ring, 3b-ps1, (Actual Time: 15:02:48 +209012)

QPA Faults: N/A

QD Alarms: (3b-qd1) B2QFA3_A2VT, Tq-23 (all others tripped with positive values)

DX Heaters: None.

QdRealQuench: (3b-qd1) B2QFA3_A2VT, eleven others fired with no indications.

Postmortems: at 1004b, many show wfg's not to be correct

Qdplots: BQMC = 1832.56amps, V-tap goes negative prior to T=0.

Beam Loss Monitors: g2-lm10 shows high beam loss, approximately 4500 rads/hr.

Quench Status: **REAL QUENCH**

Reason: Beam induced, quenched during first attempted deceleration ramp with PLL active.

Monday: Jan 14, 2002: Beam Abort, {Loss Monitor 1}, QLI in Blue Ring, 8b-ps1, (Actual Time: 17:01:00 +3005604)

QPA Faults: QP11-R8BD2-b8-dhx-qp (CROWBAR)

QD Alarms: (8b-qd1) B7QFQ2_VT Tq-24, all others indicate positive Tq values.

DX Heaters: None fired.

QdRealQuench: 12 detectors fired, only (8b-qd1) B7QFQ2_VT indicated real.

Postmortems: bo7-qf2-ps shows current begins to drop approx. -0.28sec before T=0.

Qdplots: Ramping to top energy, BDMC = 1952.37amps and BQMC = 1842.00amps makes it to the top at -7.138sec. (V-tap B7QFQ2_VT goes negative -0.29sec).

Beam Loss Monitors: Sector 8 levels indicate below 200rads/hr while in Sector 7, higher losses occur around g7-lm1=2391rads/hr and g7-mlmx.2=953rads/hr

Quench Status: **REAL QUENCH**

Reason: Beam induced.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Permit.9c-ps1 Snake Link Failure (Time: 16:10:28 +3333748)

Wednesday, January 16, 2002:

Yellow Snake yo9-snk7-2.3-ps (Snapshot Data Time: 16:10:31)

Snap Shot: (Stby-Error), The current dropped before Iref, voltage rises.

Current Settings: BMDC = 473.45amps, sitting at Injection. Snake Magnet Current = 327.13amps

Qdplots V-tap: YO9SNK7_3VT goes negative approximately -0.33sec before T=0.

Beam Loss Monitors: N/A, data not available.

Quench Status: REAL MAGNET QUENCH

Reason: Beam induced

Yellow Snake yo9-snk7-1.4-ps (Snapshot Data Time: 16:10:33)

Snap Shot: Current began to drop before Iref but then Iref dropped followed by current.

Current Settings: Snake Magnet Current = 99.98amps.

Qdplots V-tap: Perturbation takes place -2.14seconds before T=0.

Quench Status: REAL MAGNET QUENCH

Reason: Caused by y09-snk7-2.3 quench.

Friday, January 18, 2002: QLI in Yellow ring, 3b-ps1 (Actual Time: 11:36:36 +3501322)

QPA Faults: N/A.

QD Alarms: (3b-qd1) Y2DSA4_A3VT, Tq-24 Three units never finished dumping data, all others tripped indicating positive Tq values.

DX Heaters: None fired.

QdRealQuench: 18 of 20 detectors fired, no indications.

Postmortems: N/A

Qdplots: Deceleration Ramp, voltage tap goes from positive to negative before T=0. There seems to be two perturbation occurrences on the v-tap at -13.76 and -1.8 like seen on the Snake Quenches.

Beam Loss Monitors: Sector 2 indicates several higher than normal losses.

Quench Status: REAL QUENCH

Reason: Beam induced.

Friday, January 18, 2002: QLI in Blue ring, 3b-ps1 (Actual Time: 11:36:36 +3784257)

QPA Faults: N/A

QD Alarms: (3b-qd1) B3DSA3_A2VT, Tq-24 (all others fired indicating positive values).

DX Heaters: None fired.

QdRealQuench: 18 of 20 detectors fired, no indications.

Postmortems: N/A

Qdplots: Deceleration Ramp, voltage tap goes from positive to negative before T=0. There seems to be a perturbation occurrence on the v-tap at -14.60 like seen on the Snake Quenches.

Beam Loss Monitors: Sector 2 indicates several higher than normal losses.

Quench Status: REAL QUENCH

Reason: Beam induced.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Permit.3c-ps1 Snake Link Failure (Time: 01:13:16 +1046994)

Sunday, January 20, 2002:

→ **Yellow Snake yi3-snk7-1.4-ps** (ReadAlarmLog Data Time: 01:14:41)

Snap Shot: (System did not take Data at the time of QLI)

Snake Magnet Current = 100amps

Qdplots V-tap: N/A

Beam Loss Monitors: N/A

Quench Status: Not Real.

Reason: Power Supply tripped to OFF condition.

→ **Yellow Snake yi3-snk7-2.3-ps** (ReadAlarmLog Data Time: 01:48:03)

Snap Shot: (System did not take Data at the time of QLI)

Current Settings: YMDC = 473.45amps, sitting at Injection. Snake Magnet Current = 325.26amps.

Qdplots: Indicate YI3SNK7R2 GL Int1 quenched.

Quench Status: **REAL MAGNET QUENCH**

Reason: Most likely due to yi3-snk7-1.4 tripping off, causing a heat wave to travel through.

Monday: Jan 21, 2002: Beam Abort, 2b-ps1, QLI in Blue ring, 2b-ps1 (Actual Time: 14:10:08 +2593931)

QPA Faults: Blue IR power supplies off indicating no faults.

QD Alarms: (2b-qd1) BIQFQ3_VT, Tq-24 (all others tripped indicating positive Tq values).

DX Heaters: None fired.

QdRealQuench: 12 out of 20 detectors fired, (2b-qd1) BIQFQ3_VT indicates real.

Postmortems: Many indicate current and voltage changes prior to T=0.

Qdplots: BDMC=1952.35amps, BQMC=1837.37amps.

Beam Loss Monitors: High rates around sector 2 and sector 3 near the dhx and dh0 magnets. (bI-lm3=4510rads/hr).

Quench Status: **REAL**

Reason: Due to beam loss during the deceleration ramp, however, it appears that the quench occurred 7.63sec before the ramp down. George Ganetis found that while MCR was setting up for the down ramp, they ramped the Main Quads string.

Permit.3C-ps1 Snake Link Failure (Time: 07:38:24)

Friday, January 25, 2002:

→ **Blue Snake bo3-snk7-2.3-ps** (Snapshot Data Time: 07:38:24)

Snap Shot: Indicate that the power supply tripped to the OFF state.

Current Settings: BMDC = 0amps, Snake Magnet Current = 324.79amps.

Qdplots: Verify that the supply went to the off state at operating current.

Beam Loss Monitors: N/A

Quench Status: **REAL MAGNET QUENCH**

Reason: Operator Error, Power supply was given the OFF command while running at operating currents before being run down to zero amps.

→ **Blue Snake bo3-snk7-1.4-ps** (Snapshot Data Time: 07:38:24)

Snap Shot: Indicate that the power supply tripped to the OFF state.

Current Settings: Snake Magnet Current = 99.78amps.

Qdplots: Verify that the supply went to the off state at operating current.

Quench Status: **REAL MAGNET QUENCH**

Reason: Operator Error, see above.

RHIC 2001 - 2002 REAL MAGNET QUENCH EVENTS

Permit.3C-ps1) Snake Link Failure (Time: 07:38:26)

Friday, January 25, 2002:

→ **Yellow Snake yi3-snk7-2.3-ps (Snapshot Data Time: 07:38:26)**

Snap Shot: Indicate that the power supply tripped to the OFF state.

Current Settings: YMDC = 0amps, Snake Magnet Current = 325.58amps.

Qdplots: Verify that the supply went to the off state at operating current.

Beam Loss Monitors: N/A

Quench Status: **REAL MAGNET QUENCH**

Reason: Operator Error, Power supply was given the OFF command while running at operating currents before being run down to zero amps.

→ **Yellow Snake yi3-snk7-1.4-ps (Snapshot Data Time: 07:38:26)**

Snap Shot: Indicate that the power supply tripped to the OFF state.

Current Settings: Snake Magnet Current = 99.67amps.

Qdplots: Verify that the supply went to the off state at operating current.

Quench Status: **REAL MAGNET QUENCH**

Reason: Operator Error, see above.

Tech Notes: Snake Magnets were given the OFF command before running them down to zero currents for the end of the RHIC 2002 Polarized Proton Run.

End of the RHIC 2002 Polarized Proton Run !!!